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process of extrusion permits, it ascends until the small end of its shell or siphon reaches the surface of the sand, so that it may respire the water freely. In this position it remains until the spawning is completed, during which process the body is protruded from its shell to a great extent. Only four or five of the cells or capsules were observed to exist in the body of the female at one time, which were closely compacted there, occupying little space; but, after extrusion, each cell becomes enlarged in thickness, being swollen by the introduction of water. During the process of formation, the egg-case is forced upward, appearing in the form of a loop above the sand, though no portion of the parent is then visible.

This species commences to spawn early in life. One egg-case was observed, the cells of which were about a half inch in diameter, the shell of the parent being only three and a half inches long. If handled gently, when dug from the sand, the conch does not withdraw its body into its shell; but, if it is injured, it will quickly eject all the egg-cells from its body, and close its operculum. As only four or five of the egg-cells are found in the body at one time, in the process of formation, it is presumed that the whole series of cases require a long time in their development.

MAY 12.

Mr. THOMAS MEEHAN, Vice-President, in the chair.

Twenty-four persons present.

The manuscript diary of Wm. Bartram was presented to the library by Mr. Meehan. It covers the period from 1802 to 1822, and contains notes on meteorology and natural history, especially ornithology.

A paper entitled "A Review of the American Genera and Species of Mullidæ," by Edw. A. Hall and J. Z. McCaughan, was presented for publication.

MAY 19.

Mr. EDW. POTTS in the chair.

Fifteen persons present.

Erythrite, Genthite and Cuprite from near Philadelphia.—Prof. H. CARVILL LEWIS stated that during the Saturday excursions of his class in mineralogy, a number of new mineral localities had been discovered, three of which were of sufficient interest to be recorded.

ERYTHRITE.—Erythrite, the beautiful and rare arsenate of cobalt, not heretofore recorded as occurring in North America, was

found at the Wheatley lead mines, south of Phoenixville. It occurs here in veins and incrustations of a beautiful rose-pink color. Under the microscope these incrustations are shown to be for the most part composed of minute globular rosettes of crystals, while earthy and fibrous masses also occur. The mineral was found to fuse easily in the flame of a Bunsen burner, coloring the flame pale grayish blue, the color of burning arsenic. A borax bead was colored deep blue, proving the presence of cobalt. The erythrite was associated with fluorite and blende. The specimens were collected by Mr. L. Woolman.

GENTHITE.—Genthite, a hydrous silicate of nickel and magnesia, was discovered in emerald-green coatings on the Schuylkill Valley Railroad, about a hundred feet north of the steatite quarry at Lafayette, just outside the city limits. It occurs on an actinolite rock in thin coatings, which, under the microscope, show the mammillary and stalactitic structure characteristic of genthite. Fused with borax, it gives a bead which is violet-brown in the oxidizing flame, and in the reducing flame is reduced to gray metallic particles, these reactions being characteristic of nickel. The genthite is associated with the numerous magnesian minerals which have made the steatite quarry so well known. Efflorescences of epsomite and veins of asbestos were found within a few feet of the genthite.

The discovery of genthite has a geological interest in demonstrating the presence of nickel in the serpentine belt which here crosses the Schuylkill. Some years ago Mr. T. D. Rand¹ had found a single specimen of millerite, another nickel mineral, in capillary crystals in the dolomite at the same locality. With this exception, nickel had not been known in this serpentine belt. Chromic iron and other chromium minerals are, however known to occur in several localities in the same zone of serpentine, and the association of chromium and nickel is well known. The serpentines of Cornwall, the Alps, the Vosges, and of hundreds of other localities, contain both chromium and nickel. Dr. T. Sterry Hunt states² that the serpentines of his third (Green Mountain) series, which he refers to the lower Silurian age, are "marked by the almost constant presence of small portions of the oxides of chrome and nickel," a character which distinguishes them from the serpentines of the Laurentian series, which are usually free from these metals. Dr. Hunt, however, fails to identify the serpentine and steatite of Lafayette with his Green Mountain series, but supposes it to belong to another horizon,³ refusing to believe that it was derived from an eruptive rock.

¹ Proc. Min. and Geol. Sec. Acad. Nat. Sci. Phila., 1877.

² Chemical and Geological Essays, 1875, p. 32.

³ The Geological History of Serpentines. Trans. Roy. Soc. Canada, 1883, i, p. 171.

Yet the presence of chromium and nickel in serpentine are facts in favor of its eruptive origin. For very many serpentines are derived from peridotite, as has been clearly shown by recent work in microscopic lithology. Most peridotites, whether meteoric or terrestrial, as the numerous analyses collected by Dr. M. E. Wadsworth¹ demonstrate, contain chromium and nickel. Most stony meteorites contain these same elements, and even the iron meteorites, in which the presence of nickel is so characteristic, frequently contain chromium. The late Dr. Lawrence Smith has described² nodules of chromite in meteoric iron, and has described a new sulphide of chromium and iron, under the name of Daubréelite,³ peculiar to meteorites, and, as he believes, almost constantly present.⁴ Chromite is well known to occur in terrestrial eruptive rocks. The association of nickel and chrome has previously been noticed in Pennsylvania at Wood's Chrome Mine, Lancaster County, where genthite⁵ (described as nickeligymnite) was originally found. Genthite is associated with chromite also at Webster, Jackson County, North Carolina, where it forms handsome apple-green specimens incrusting chromite, and it is said to have a similar association at Malaga, Spain. Zaratite, a carbonate of nickel, occurs with chromite in West Nottingham, Chester County. Genthite has also been found at two other chrome-ore mines in Lancaster County,⁶ but until now not elsewhere in this State.

CUPRITE.—Bright vermilion-red earthy incrustations of cuprite, were noticed at Frankford, Philadelphia, in the quarries of hornblende gneiss, so well known to mineralogists. This red oxide of copper here sometimes forms a coating on bornite, which latter is a beautiful, and somewhat abundant, mineral, at these quarries. The cuprite has in this association a peculiarly resinous lustre, and the specimens collected closely resemble red sealing-wax.

Bothriocephalus in a Trout.—Prof. LEIDY remarked that through Dr. B. H. Warren he had recently received from the Smithsonian Institution, several vials with tape-worms, obtained by Mr. L. M. Turner, from a trout, *Salvelinus*——?, at Ft. Chimo, Ungava. One of the vials contained eight worms ranging from 3 to 8 inches long, together with fragments of others; and was labeled, "Passed from a Trout, caught in the river, August 14, 1882." The worms belong to a species of *Bothriocephalus* or *Dibothrium*, apparently different from either the *D. infundibuliforme* or *D. proboscideum*, found in *Salmo salvelinus*, *S. salar*,

¹ Mem. Mus. Comp. Zool. Cambr., xi, 1, Lithological studies, tables.

² Amer. Jour. Science, xxi, 1881, p. 461.

³ Amer. Jour. Science, xii, 1876, p. 107, and xvi, 1878, p. 270.

⁴ Original Researches, 1884, p. 543.

⁵ Keller-Tiedemann, Nordam. Monatsbericht, iii, 488.

⁶ Report B, Second Geolog. Survey of Penna., p. 118.